

PILOSTYLES THURBERI (RAFFLESIACEAE) IN TEXAS AND NEW MEXICO

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In the course of investigations of the Genus *Pilostyles*, the authors have greatly expanded the known distribution of this interesting parasitic flowering plant.

Approximately ten collections were known for this plant in Texas when this study began in 1959. Frederick V. Coville made the first known collections in Texas on the Matador ranch, Dickens County, 14 June 1894 (no. 1860) and between Big Spring and Dorwood ranch, Texas, 19 June 1904 (no. 1891). (Coville started a new series of collection numbers each year). These collections were the basis for *Pilostyles covillei* by J. N. Rose (Contrib. U.S. Nat. Herb. 12:263. 1909). Since these early collections, the authors and others have extended the known distribution to 34 counties in Texas with 63 collections; and New Mexico in 2 counties with 3 collections. Despite repeated efforts the plant has not been found in Oklahoma, although both of the host species of *Dalea* occur there. It seems worthwhile to publish these records primarily to encourage others to look for this interesting plant.

Variations have been observed by the authors in the growth patterns of the parasite on the two hosts. The infected plants generally exhibit slight stunting and more profuse branching than adjacent uninfected plants (Fig. 1). The host may exhibit chlorotic tendencies. The parasite occurs in longitudinal rows or dense masses at the base of the stem on *Dalea frutescens* (Fig. 3). On *Dalea formosa*, the parasite may occur in basal masses, longitudinal rows, or solitarily (Fig. 4). The parasite is found primarily on plants growing under marginal or "stress" conditions (usually exposed rocky ledges).

The individual flowers are red-purple to brown-purple in color and approximately 1-3 mm. long and 0.5-2 mm. wide (Fig. 2). The flower is unisexual and usually has four or more sepals without petals. The calyx and subtending bracts are usually white tipped.

The following list is based on specimens deposited at the herbarium of Texas Technological College unless otherwise indicated.

TEXAS COLLECTIONS

On *Dalea formosa*:

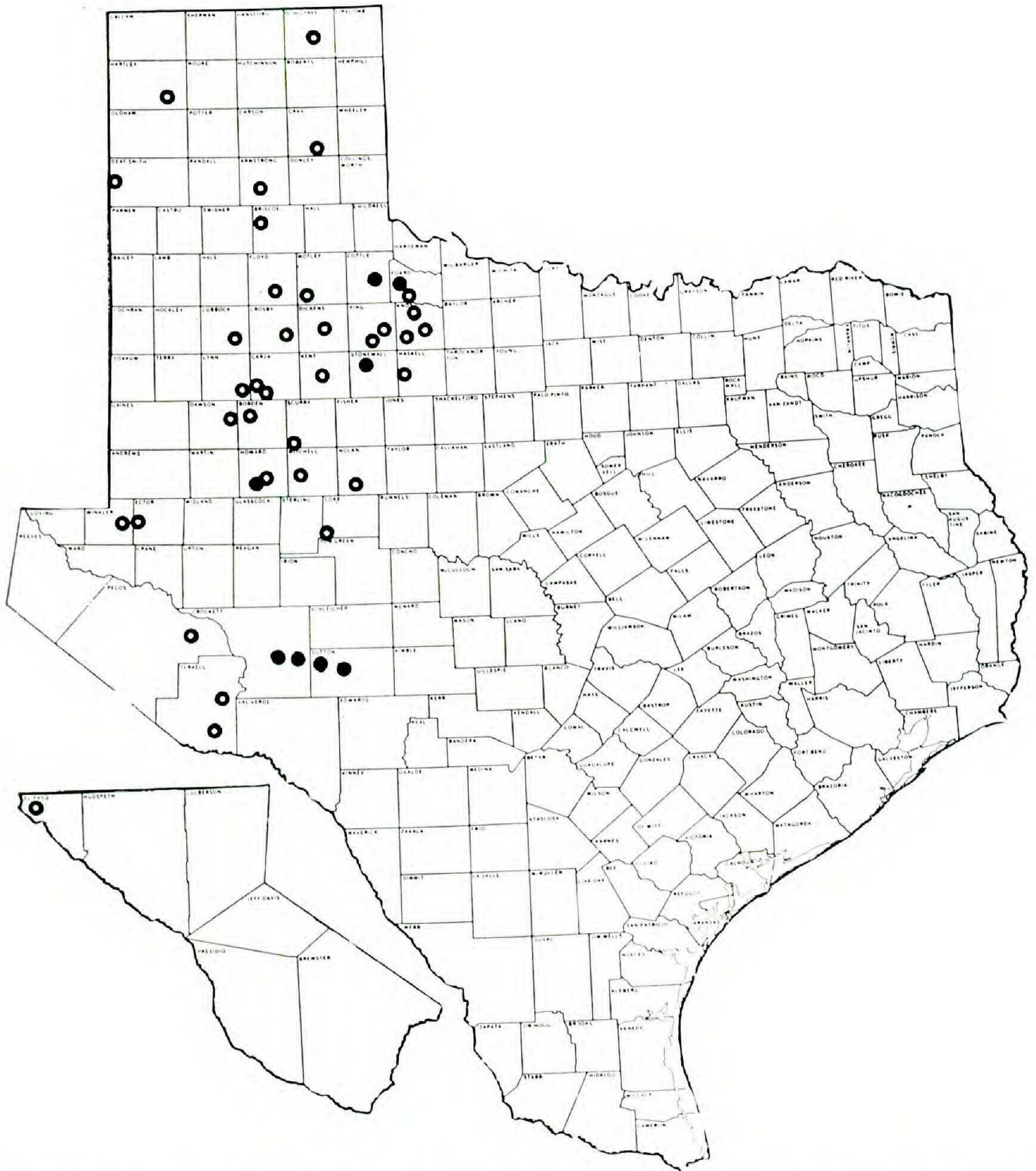
Armstrong County

Rowell 8030, 22 Nov. 1959

Rowell 8251a, 2 May 1961

Blassingame 670 & Rowell, 13 June 1966

Blassingame 671 & Rowell, 14 June 1966



Map 1. County distribution of *Pilostyles thurberi* Gray in Texas. Open circles: on *Dalea formosa*; closed circles: on *D. frutescens*.

Borden County	Blossingame 688 & Stanford, 25 June 1966
Briscoe County	Blossingame 672 & Rowell, 14 June 1966
Coke County	Blossingame 653, 6 June 1966
Crosby County	Blossingame 680, 23 June 1966
Dawson County	Blossingame 690 & Stanford, 25 June 1966
Deaf Smith County	Waller 1031, 3 Aug. 1966
Dickens County	Coville 1860, 14 June 1894 (US)
	Blossingame 675, 15 June 1966
Ector County	Rowell 8784, 4 June 1963
	Blossingame 579, 12 June 1965
	Blossingame 621, 2 June 1966
El Paso County	Warnock 16986 & M. C. Johnston, 25 Oct. 1958 (SRSC)
Foard County	Blossingame 663, 9 June 1966

- Floyd County Rowell 8231a, 18 June 1962
Blossingame s.n., 19 June 1964
- Garza County Blossingame 658 & Rowell, 7 June 1966
Rowell 10168, 7 June 1964
Hutchins 1226 & Blossingame, 16 June 1966
Hutchins 1227 & Blossingame, 16 June 1966
- Gray County Rowell 10152, 28 May 1964
- Hartley County Blossingame 678 & Rowell, 19 June 1966
- Haskell County Blossingame 666, 10 June 1966
- Howard County Blossingame 656, 6 June 1966
- (Howard County)? Coville 1891, 19 June 1904
- Kent County Blossingame 676, 15 June 1966
- King County Blossingame 681, 23 June 1966
- Knox County Blossingame 664, 9 June 1966
Blossingame 665, 9 June 1966
Blossingame 682, 23 June 1966
- Lubbock County Myrick s.n. & Rowell, 4 June 1960
Blossingame 659 & Rowell, 7 June 1966
- Lynn County Blossingame 687 & Stanford, 28 June 1966
- Mitchell County Blossingame 668, 11 June 1966
- Motley County Blossingame 686, 26 June 1966
- Nolan County Blossingame 667, 10 June 1966
- Ochiltree County Rowell 10373, 5 June 1964
- Pecos County Warnock 17315 & M. C. Johnston, 1 Nov. 1958 (SRSC)
- Scurry County Blossingame 669, 11 June 1966
- Terrell County Warnock 17237 & M. C. Johnston, 1 Nov. 1958 (SRSC)
Rowell 8252, 6 Aug. 1962
Blossingame 639, 5 June 1966
Blossingame 640, 5 June 1966
- Winkler County Rowell 8306, 6 May 1962
Rowell 8566, 5 May 1963
- On *Dalea frutescens*:
- Cottle County Blossingame 661, 9 June 1966
- Crockett County M. C. Johnston 3261, 10 Sept. 1958
M. C. Johnston 3265, 10 Sept. 1958
Rowell 8253, 6 Aug. 1962
Blossingame 647, 5 June 1966
Blossingame 648, 5 June 1966
Blossingame 650, 5 June 1966
Blossingame 651, 5 June 1966
- Foard County Blossingame 662, 9 June 1966
- Howard County Blossingame 657, 6 June 1966
- Stonewall County Blossingame 674, 15 June 1966
- Sutton County M. C. Johnston 3260, 10 Sept. 1958 (SRSC)
Rowell 6000, 29 May 1959
Rowell 8763, 3 June 1963
Blossingame 652, 6 June 1966
- (County unknown) Lindheimer 376 (isotype of *D. frutescens*) (SMU)

NEW MEXICO COLLECTIONS

On *Dalea formosa*

- Guadalupe County Blossingame 691 & Rowell, 5 Aug. 1966
- San Miguel County Rowell 8551, 3 May 1963
Blossingame 692 & Rowell, 7 Aug. 1966
Blossingame 693 & Rowell, 7 Aug. 1966

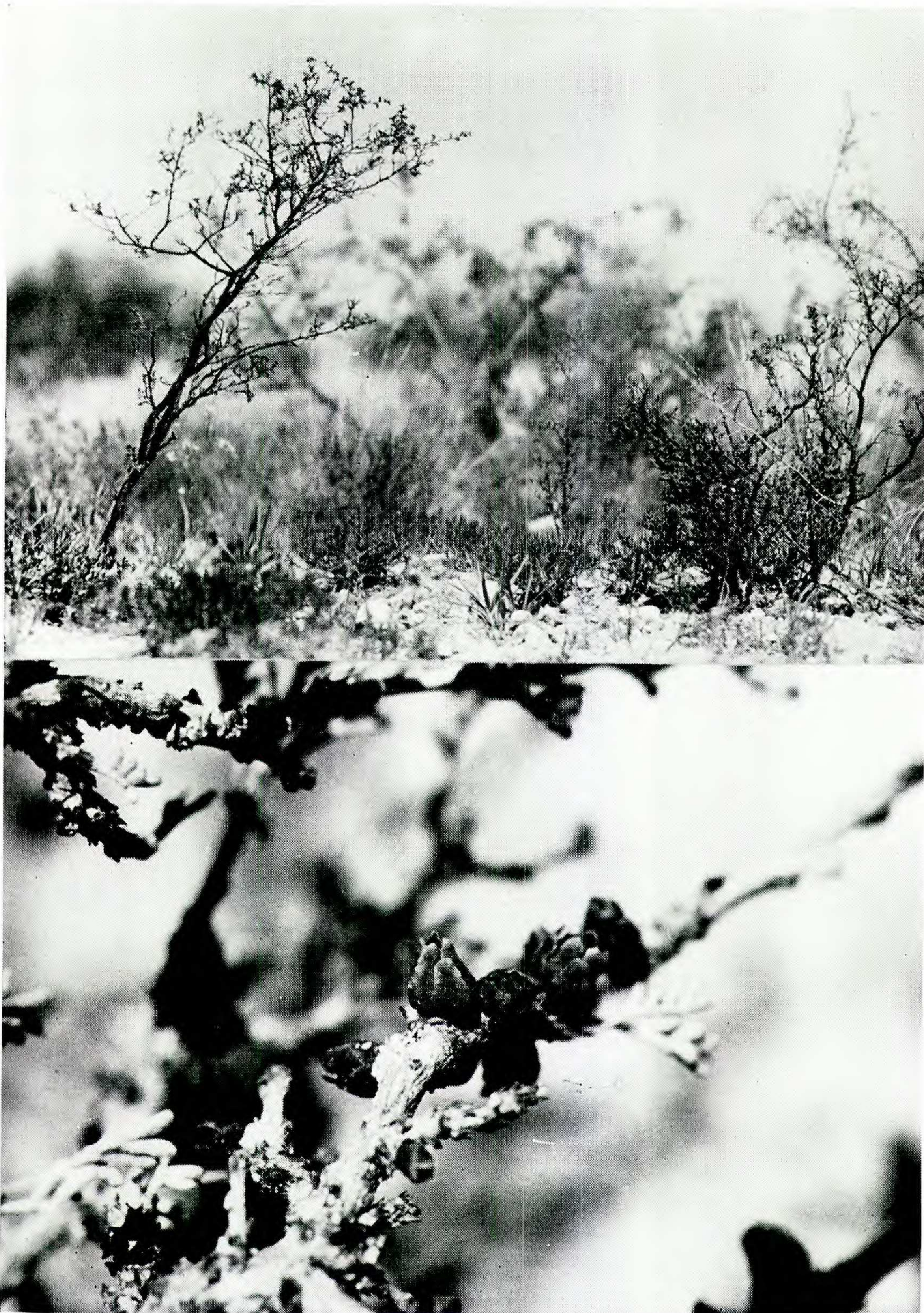


Fig. 1. (upper) Habitat photograph of *Dalea formosa* with infected plant on right.

Fig. 2. (lower) Detail photograph of *Pilostyles* flowers.

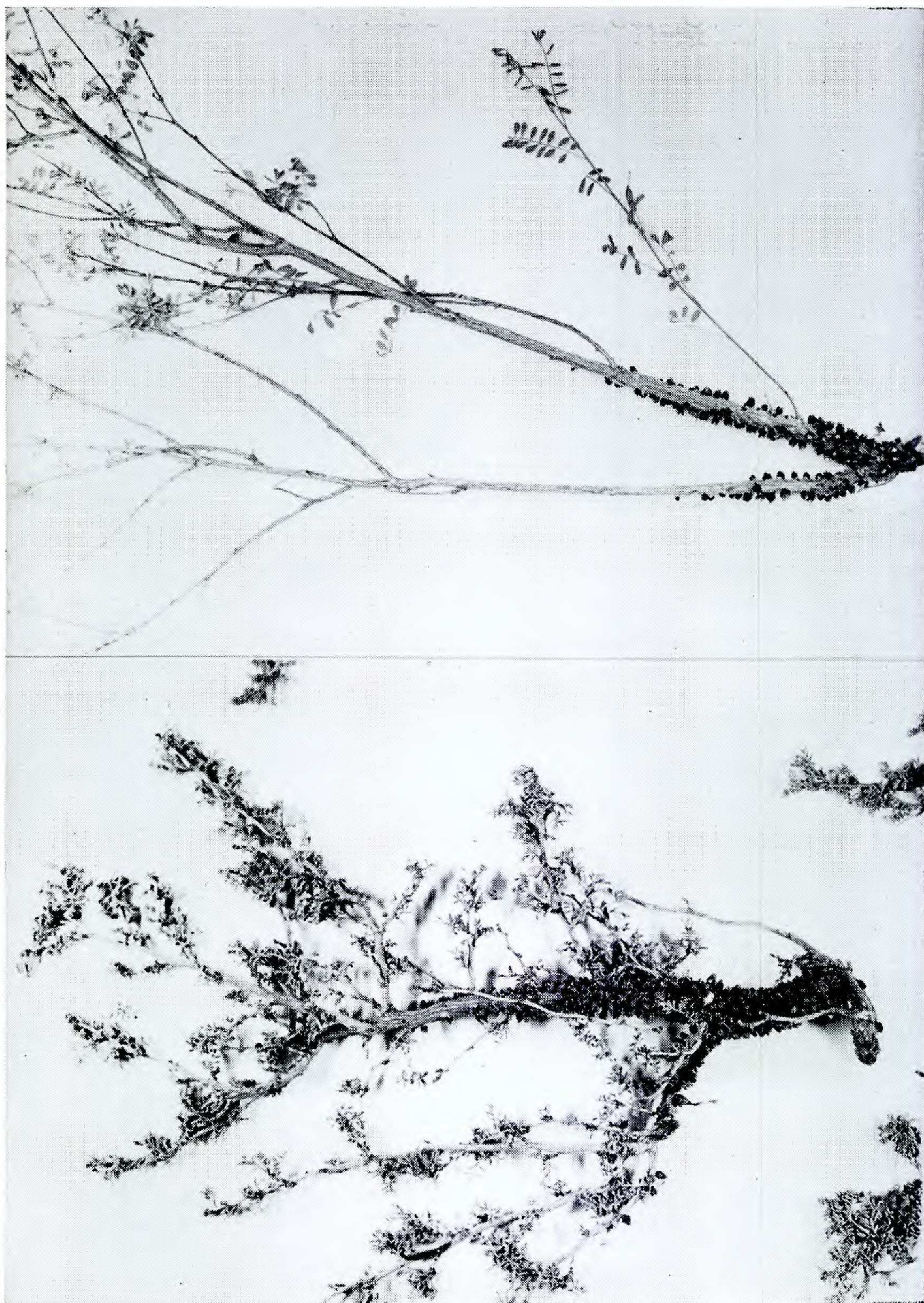


Fig. 3. (upper) Photograph of *Pilostyles* on *Dalea frutescens*.

Fig. 4. (lower) Photograph of *Pilostyles* on *Dalea formosa*.